

City of Tucson, Arizona

Summary of Cost of Service and Rate
Recommendations Study



Final Report

April 2004

Submitted by:



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Mr. Eliseo Garza, Jr.
Director, Environmental Services
City of Tucson
4004 South Park Avenue
Tucson, AZ 85714

**Re: Summary of Cost of Service Analysis and Rate Recommendations for the
City of Tucson's Environmental Services**

Dear Mr. Garza:

R.W. Beck, Inc. was retained by the City of Tucson in February 2004 to update the FY 2003/2004 cost of service study prepared by our firm for the City's solid waste system. The primary purpose of the update is to develop a five-year cost of service based rate projection for FY 2004/2005 through FY 2008/2009.

The purpose of this memorandum is to describe the methodology implemented to conduct the requested analysis and present the results. This memorandum is divided into the following sections:

- A. Overview of Environmental Services Operations
- B. Description of Analysis Methodology
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A. Overview of Environmental Services Operations

Environmental Services currently provides solid waste services to 141,571 residential accounts, 5,480 dumpsters (includes 468 recycling dumpsters and 384 currently non-

paying accounts), and 163 roll-off/compactor containers. Solid waste services provided by Environmental Services include the following:

Residential service is provided once per week to City of Tucson residents via automated side-loader trucks. Most customers have either 90-gallon rollout containers or 350-gallon stationary, shared containers. A few customers have 60-gallon and 30-gallon containers. All residential customers are also provided once per week recycling services and twice a year brush/bulky collection services. The City currently charges \$2 per month for the Clean Tucson program but does not charge a fee for other residential services.

Commercial services provided by the City include dumpster collection and disposal for one to eight cubic yard containers via front-loader collection vehicles. Additionally, the City provides collection and disposal of roll-off open top and compactor containers, ranging in size from 20 to 40 cubic yards. Commercial collections range in frequency from one to six times per week, depending on the customer's needs.

The Los Reales Landfill is owned and operated by the City of Tucson. This landfill receives approximately 556,500 tons of refuse each year. Approximately 330,000 tons of disposal at this site is from City provided collection services (residential and commercial customers). The remaining 227,000 tons is from private and self-haulers. Additionally, residents may drop-off household hazardous waste, metal appliances, scrap metal, computers, antifreeze, batteries, and old paint at the landfill for processing and/or recycling free of charge.

B. Description of Analysis Methodology

The cost analysis associated with this study required a systematic progression of steps. The ultimate goal of the cost analysis was to determine solid waste rates that accurately recover the costs of operating the City's Environmental Services. The first step involved the identification of the Environmental Services expenses itemized in the City's financial reports. Based on these expenses, R.W. Beck determined the annual amount of revenue that would be required to adequately fund all services provided by Environmental Services.

The second step entailed the assignment and allocation of costs to various service categories. R.W. Beck used the same 20 service categories developed for the 2003 study in the five-year update. The costs of operating the City's Environmental Services were then allocated to the appropriate cost categories. The final step required the identification of the billing units associated with each customer class, such as residential (including the Clean Tucson program) and commercial, resulting in cost of service based rates for the City's various customer classes.

1. Five-Year (FY 2004/2005 – FY 2008/2009) Revenue Requirement

In developing the five-year revenue requirement for Environmental Services, R.W. Beck relied on five-year Environmental Services pro-forma budget data provided by City staff.

R.W. Beck made several adjustments to the adopted budget based on input from City staff. These adjustments, which were made to more accurately reflect the cost of providing services, are listed below:

- Adjusted the Administration budget to account for the following:
 - a. Decreased group insurance costs by \$5,215 in FY2004/2005 and by \$10,430 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased the FY 2004/2005 budget by a total of \$185,560 to reflect budget adjustments provided by City staff. These costs were inflated at an annual rate of 3% for the remaining four years. \$100,000 of this increase was provided to help fund the "Low Income Program", and \$84,240 was provided to reflect higher insurance costs.
- Adjusted the Customer Support and Billing budget to account for the following:
 - a. Decreased group insurance costs by \$5,390 in FY 2004/2005 and by \$10,780 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased annual residential billing costs by \$70,560 in FY 2004/2005 to account for additional costs that would be realized should the City implement user fees for residential customers. These costs were inflated at an annual rate of 7.5% for the remaining four years.
 - c. Increased the FY 2004/2005 budget by a total of \$36,934 to reflect budget adjustments provided by City staff. These costs were inflated at an annual rate of 3% for the remaining four years.
 - d. Increased the FY 2004/2005 budget by \$67,026 to account for a one-time purchase of books, computers and other equipment. \$50,000 of this increase is for phone system upgrades.
- Adjusted the Program Development and Planning budget to account for the following:
 - a. Reduced expenses for miscellaneous distributed labor to \$0 in all five years to eliminate the transfer of expenses between departments.¹
 - b. Decreased group insurance costs by \$2,100 in FY 2004/2005 and by \$4,200 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - c. Increased the FY 2004/2005 budget by a total of \$82,020 to reflect budget adjustments provided by City staff. These costs were inflated at an annual rate of 3% for the remaining four years.

¹ The cost-of-service based rates discussed in this memorandum are based on the allocation of expenses to the customer classes incurring the costs. Therefore, the inter-department transfer of expenses to more equitably distribute costs across programs is adjusted for through R.W. Beck's cost methodology.

- Subtracted \$410,000 in all five years for the Recycling Grant.
- Adjusted the Code Enforcement budget to account for the following:
 - a. Decreased group insurance costs by \$4,531 in FY 2004/2005 and by \$9,062 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased the FY 2004/2005 budget by a total of \$46,844 to reflect budget adjustments provided by City staff. \$43,890 of this increase reflects increased insurance costs. These costs were inflated at an annual rate of 3% for the remaining four years.
 - c. Increased the FY 2004/2005 budget by \$15,000 to account for a one-time purchase of books, computers and other equipment.
- Adjusted the Residential Collections budget to account for the following:
 - a. Reduced expenses for miscellaneous labor to \$0 in all five years to eliminate the transfer of expenses between departments.
 - b. Decreased group insurance costs by \$34,120 in FY 2004/2005 and by \$68,240 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - c. Increased the FY 2004/2005 budget by a total of \$326,420 to reflect budget adjustments provided by City staff. \$277,620 of this increase reflects higher insurance costs. These costs were inflated at an annual rate of 3% for the remaining four years.
 - d. Increased salary expenses by \$89,447 in FY 2004/2005 to account for expected growth. These costs were inflated at an annual rate of 7.5% for the remaining four years. Salary expenses were simultaneously decreased by \$83,370 in FY 2004/2005 to account for the transfer of a superintendent's salary from residential to Clean Tucson (a corresponding increase was made to Clean Tucson).
- Adjusted the Clean Tucson budget to account for the following:
 - a. Increased salary expenses by \$89,447 in FY 2004/2005 to account for expected growth. These costs were inflated at an annual rate of 7.5% for the remaining four years. Salary expenses were simultaneously increased in all five years by \$83,730 to account for the transfer of a superintendent's salary from residential to Clean Tucson (a corresponding decrease was made to residential).
 - b. Decreased group insurance costs by \$7,726 in FY2004/2005 and by \$15,452 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - c. Increased the FY 2004/2005 budget by a total of \$83,380 to reflect budget adjustments provided by City staff. \$60,550 of this increase reflects higher insurance costs. These costs were inflated at an annual rate of 3% for the remaining four years.

- d. Reduced expenses for miscellaneous labor to \$0 for all five years to eliminate the transfer of expenses between departments.
- Adjusted the Commercial Collections budget to account for the following:
 - a. Reduced expenses for interactivity credits to \$0 for all five years to eliminate the transfer of expenses between departments.
 - b. Reduced expenses for other services to \$0 for all five years to eliminate the transfer of expenses between departments.
 - c. Decreased group insurance costs by \$20,781 in FY 2004/2005 and by \$41,562 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - d. Increased the FY 2004/2005 budget by a total of \$178,370 to reflect budget adjustments provided by City staff. \$149,110 of this increase reflects higher insurance costs. These costs were inflated at an annual rate of 3% for the remaining four years.
- Adjusted the Container Maintenance budget to account for the following:
 - a. Decreased group insurance costs by \$3,510 in FY 2004/2005 and by \$7,020 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased the FY 2004/2005 budget by a total of \$72,060 to reflect budget adjustments provided by City staff. These costs were inflated at an annual rate of 3% for the remaining four years. \$52,200 of this increase reflects budget shortfalls for container parts.
- Adjusted the Engineering and Technical Support budget to account for the following:
 - a. Decreased group insurance costs by \$7,905 in FY 2004/2005 and by \$15,810 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased the FY 2004/2005 budget by a total of \$366,700 to reflect budget adjustments provided by City staff. \$78,690 of this increase reflects higher insurance costs, \$122,000 is for closed landfill maintenance, and \$100,000 is for a Citywide Environmental Assessment program. These costs were inflated at an annual rate of 3% for the remaining four years.
- Adjusted the Landfill Operations budget to account for the following:
 - a. Decreased group insurance costs by \$11,954 in FY 2004/2005 and by \$23,908 in FY 2005/2006 to reflect budget adjustments provided by City staff.
 - b. Increased the FY 2004/2005 budget by a total of \$154,252 to reflect budget adjustments provided by City staff. \$124,960 of this increase

reflects higher insurance costs. These costs were inflated at an annual rate of 3% for the remaining four years.

- Eliminated all vehicle purchase expenses from all service categories for the five-year period to reflect the move away from cash financing towards the use of surrogate debt and a capital reserve fund for vehicle purchases.
- Increased uncollectible accounts expenses by a constant rate of 2% of departmental costs over five year period.
- Included \$500,000 in each fiscal year for capital fund transfers.
- Included \$1,000,000 in FY 2004/2005 for transfers to the general fund (for administrative support services) that may be required if Environmental Services becomes an Enterprise Fund. These costs were increased at a constant rate of \$500,000 per year through FY 2008/2009.

In addition to the adjustments noted above, costs that have not historically been included in the Environmental Services budget were added for the following items:

- Debt Service (funded with general obligations, etc.)
- Closure Costs
- Post-Closure Care Costs
- Capital Reserve Fund for Vehicle Purchases

It is important that these costs be included in the development of all solid waste user fees, since these costs are associated with the operation of the City of Tucson's Environmental Services.

Using the five-year pro-forma budget and the adjustments listed above, the Environmental Services annual revenue requirement for FY 2004/2005 is expected to total \$36,887,027. Five-year revenue requirement figures are presented in Table 1. A detailed breakout of these costs through FY 2008/2009 is provided in Schedule 1.

Table 1
Environmental Services Five-Year Revenue Requirement

	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
Budgeted	\$ 27,923,757	\$ 29,587,295	\$ 30,953,378	\$ 32,357,017	\$ 33,813,893
Adjustments	\$ 8,963,270	\$ 10,205,821	\$ 14,995,070	\$ 15,175,193	\$ 17,036,824
Total	\$ 36,887,027	\$ 39,793,116	\$ 45,948,448	\$ 47,532,210	\$ 50,850,717

2. Allocation to Service Categories

Environmental Services provides various services to the community. For the purpose of this study, the services were functionalized into 20 service categories. Identification of

the total cost associated with each service category was a critical step in determining an accurate rate that reflects the true cost of service. These costs were isolated by service category to ultimately recover the total revenue requirement by matching those customers that utilize the service with the actual costs associated with that service. The FY 2004/2005 cost for providing each service is presented in Table 2. Cost of service projections for the five-year period through FY 2008/2009 are provided in Schedule 2.

Table 2
FY 2004/2005 Revenue Requirement by Service Category

Service Category	Program Cost
Residential Collections	
Administration	\$1,583,953
Collection	\$14,131,308
Disposal Operations	\$2,799,505
Disposal Remediation	\$1,417,756
Clean Tucson	
Administration	\$59,463
Collection	\$2,428,676
Disposal Operations	\$234,152
Disposal Remediation	\$97,508
Subtotal	\$22,752,321
Commercial Collection – Dumpsters	
Administration	\$131,298
Collection	\$3,558,430
Disposal Operations	\$1,206,062
Disposal Remediation	\$671,547
Container Maintenance	\$842,607
Subtotal	\$6,409,944
Commercial Collection – Roll-offs	
Administration	\$3,629
Collection	\$962,178
Disposal Operations	\$372,241
Disposal Remediation	\$207,268
Container Maintenance	\$25,063
Subtotal	\$1,570,378
Privates/Self Haulers	
Disposal Operations	\$3,953,202
Disposal Remediation	\$2,201,182
Subtotal	\$6,154,384
Total	\$36,887,027

3. Billing Units

In order to calculate the appropriate user fees, it was necessary to determine the proper number of annual billing units, which includes the number of customers for various service categories and tonnages. These numbers were then used to determine the cost of service based user fees by dividing the revenue requirement by the appropriate billing units. Customer account details for the five-year study are presented in Table 3.

- ✓ **Residential Customers** - Residential billing units are the number of residential accounts. Per City staff, estimated accounts for FY 2004/2005 are 141,571. Residential customer growth was calculated at a constant rate of 2,400 new accounts per year per City staff, for an approximate annual growth rate of 2%. The number of residential customer accounts is used to determine rates for garbage collection and disposal, recycling collection, and services provided as part of the Clean Tucson program.
- ✓ **Commercial Dumpster Customers** - Billing units for dumpster customers are based on the total number of containers (5,480 in FY 2004/2005, including recycling containers and currently non-paying accounts), container size (one to eight cubic yards) and collection frequency (one to six times per week). Commercial dumpster customer growth was calculated at a constant annual rate of 2% through FY 2008/2009 per City staff.
- ✓ **Commercial Roll-off Customers** - Billing units for roll-off customers are based on the number of open top/compactor containers (163 in FY 2004/2005), and the number of "pulls" during a 12-month period (10,848 in FY 2004/2005).² Growth in commercial roll-off customers and annual pulls were both calculated at a constant annual rate of 2% per City staff.

Table 3
Five-Year Customer Growth Projections

	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
Residential	141,571	143,971	146,371	148,771	151,171
Commercial					
Dumpsters	5,480	5,590	5,701	5,815	5,932
Roll-offs	163	166	170	173	176

² A "pull" is when a roll-off is picked up by a City truck and emptied at the City landfill.

C. Rates and Fees

R.W. Beck developed rates and fees for the various solid waste services provided by Environmental Services. R.W. Beck has provided rates for residential and commercial collection, including dumpsters, and commercial roll-offs.

1. Residential Monthly Rate Per Household

Rates and fees associated with residential collection and disposal should be set at a level sufficient to recover the costs associated with providing all residential services. Residential monthly rates for FY 2004/2005 through FY 2008/2009 as calculated for the rate study are presented in Table 4. A detailed breakout of the residential rate is presented in Schedule 3.

Table 4
Five-Year Residential Rate Projections

FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
\$14.08	\$14.79	\$16.55	\$16.80	\$17.60

2. Monthly Rate Per Dumpster Account

The commercial dumpster rates are based on the extent to which customers use the various commercial dumpster services. This rate structure is based on the following five components of service:

1. Administration
2. Collection
3. Disposal – Operations
4. Disposal - Remediation
5. Container Maintenance

The cost for the five components of dumpster services for FY 2004/2005 is presented below. Please see Schedule 4 for five-year cost of service projections.

- | | |
|---------------------------|---------------------------------|
| 1. Administration | \$2.00 per container per month |
| 2. Collections | \$6.47 per pull |
| 3. Disposal – Operations | \$0.40 per cubic yard capacity |
| 4. Disposal – Remediation | \$0.22 per cubic yard capacity |
| 5. Container Maintenance | \$12.81 per container per month |

The cost components are broken out so that customers pay only for the services from which they benefit. For instance, each of the 5,480 dumpsters shares equally in the

Administration Costs. **Container Maintenance Costs** are driven by the number of containers that each customer maintains. These costs reflect the repair costs incurred by the City to maintain the containers. **Disposal Costs** are driven by the amount of cubic yard capacity a customer has, multiplied by the frequency of times the container is picked up each month. **Collection Costs** are those costs identified with maintaining the City collection equipment and having crews available to collect the garbage in the dumpsters. This factor is driven by frequency of pick-ups, rather than the capacity of the containers. Proposed cost of service based commercial dumpster user fee rates for FY 2004/2005 are presented in Table 5. See Schedule 4 for dumpster user rate fees for the five-year period through FY 2008/2009.

Table 5
Dumpster Monthly Rates for FY 2004/2005

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$45.55	\$76.29	\$107.03	\$137.77	\$168.51	\$199.25
2	\$48.24	\$81.68	\$115.11	\$148.54	\$181.98	\$215.41
2.75	\$50.26	\$85.72	\$121.17	\$156.62	\$192.08	\$227.53
3	\$50.94	\$87.06	\$123.19	\$159.32	\$195.44	\$231.57
3.5	\$52.28	\$89.76	\$127.23	\$164.70	\$202.18	\$239.65
4	\$53.63	\$92.45	\$131.27	\$170.09	\$208.91	\$247.73
5	\$56.32	\$97.84	\$139.35	\$180.86	\$222.38	\$263.89
6	\$59.02	\$103.22	\$147.43	\$191.64	\$235.84	\$280.05
8	\$64.40	\$114.00	\$163.59	\$213.18	\$262.78	\$312.37
Recycling	\$42.86	\$70.90	\$98.95	\$127.00	\$155.04	\$183.09

3. Monthly Rates for Roll-off Accounts

The construction of rates for roll-off accounts was undertaken in a manner similar to that used for dumpster accounts. Each cost component was determined based upon the following methodology. Five-year cost projections for the five-year period are shown in Table 6.

- Administration Costs – Allocated on a per container basis.
- Collection Costs – Allocated on a per pull basis.
- Container Maintenance – Allocated on a per container basis.

Table 6
Five-Year Roll-Off Rate Cost Projections

	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
Administrative Costs	\$3,629	\$3,819	\$4,172	\$4,471	\$4,795
Collection Costs	\$962,178	\$1,054,432	\$1,274,360	\$1,322,843	\$1,432,111
Disposal Costs	\$579,509	\$628,123	\$738,972	\$752,009	\$800,681
Container Maintenance	\$25,063	\$26,668	\$29,471	\$31,058	\$33,077

The proposed rates for roll-off customers for FY 2004/2005 are listed in Table 7. Please see Schedule 5 for five-year projections for roll-off rates through FY 2008/2009.

Table 7
Roll-Off Monthly Rates for FY 2004/2005

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$399.02	\$783.37	\$1,167.72	\$1,552.07	\$1,936.42	\$2,320.77
30	\$399.02	\$783.37	\$1,167.72	\$1,552.07	\$1,936.42	\$2,320.77
40	\$399.02	\$783.37	\$1,167.72	\$1,552.07	\$1,936.42	\$2,320.77

In addition to the collection charges identified in the table above for roll-offs, the City should charge a disposal fee based on the tonnage of waste collected by roll-off vehicles. The "cost of service" based tipping fee for FY 2004/2005 is \$23.18 per ton, as determined in the following section.

4. Disposal Fee (for Roll-offs, Private Haulers, and Self Haulers)

The costs associated with refuse disposal were determined to be \$13,160,422 in FY 2004/2005. These costs were allocated to four customer classes based on the historical annual tonnage generated by each of these customer classes. In determining cost allocations through FY 2008/2009, tonnage was allocated to customer classes in the same ratios as in FY 2004/2005.

	<u>Annual Tonnage</u>
Residential	171,000
Clean Tucson	14,000
Commercial Dumpster	81,000
Roll-offs	25,000
City Departments	38,500
Self Haulers	57,000
Private Haulers	170,000
Total Annual Tonnage	556,500

The residential and dumpster accounts have their cost-based portion of the landfill disposal costs (operation and remediation) incorporated into their monthly bills. For roll-off customers, city departments (paying and non-paying), self haulers and private haulers, the tipping fee in FY 2004/2005 was determined to be \$23.18 per ton. Table 8 shows per ton tipping fees through FY 2008/2009.

Table 8
5-Year Per Ton Tipping Fee Projections

FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
\$23.18	\$25.12	\$29.56	\$30.08	\$32.03

D. Impact of Future Debt

The purpose of this rate study was to determine the cost of service rates for FY 2004/2005 through FY 2008/2009 based on the organizational and operational changes implemented since the previous rate study was conducted. Over the next several years, the City expects to incur additional debt to finance the purchase of replacement vehicles and fund several ongoing landfill-related projects that are currently unfunded. Using unfunded project information provided by the City, R.W. Beck calculated annual debt service for the five year period through FY 2008/2009. Schedule 7 provides a summary of annual debt expenses for FY 2004/2005 through FY 2008/2009. Schedule 8 presents the breakout of debt service costs by service category. In summary, annual debt service is expected to increase from \$3,997,217 in FY 2004/2005 to \$7,383,070 by FY 2008/2009.

As a result of the increase in annual debt service, the City will need to adjust the following rates:

- Monthly residential rate
- Per ton disposal fee
- Dumpster rates

E. Rate Design Issues

As mentioned in the previous section, the City is going to have to consider future rate increases in commercial dumpster and roll-off rates, per ton disposal fees, and residential fees (if residential fees are implemented, above and beyond the \$2 monthly service fee for biannual brush/bulky collection and the Clean Tucson program). The purpose of this section is to address four rate design issues:

1. Methods for implementing rate increases
2. Impact rate increases will have on cost recovery
3. Importance of implementing rate increases in a timely manner
4. Variable pricing or "pay as you throw"

1. Methods for Implementing Rate Increases

R.W. Beck has worked with countless cities in the design of rate increases that were to be implemented over a five- to ten-year period. There are three basic ways in which rate increases can be implemented:

- A. Set amount every year
- B. Every two or three years
- C. All at once

A. Set Amount Every Year

Some cities will conduct a five-year forecast and determine that if the total revenue requirement is going to increase 30% over a five-year period, to implement a 6% annual increase, regardless of whether or not costs increase every year by that amount. Under this scenario, revenue recovery during a particular year may differ significantly from the annual revenue requirement in that same year. However, by the end of the five-year period; the rates implemented in Year Five should be generating revenue that is fairly close to the projected revenue requirement in Year Five.

This type of rate increase is very easy for citizens to understand and can be an effective rate option if the annual rate increases are relatively small (i.e. less than 4% to 6% per year).

B. Every Two or Three Years

Some cities that are facing a 30% increase over a five-year period will elect to phase the rate increase in over the five-year period with rate increases in only two of the five years. The size of the increase in the annual revenue requirement during the five-year forecast will oftentimes dictate the years in which the rate increases will be implemented. For instance, in reviewing Schedule 7 of the report it can be noted that there will be significant increases in the City's debt service for three consecutive fiscal years, beginning with FY 2005/2006. Therefore, the City may elect to increase rates in FY 2005/2006 and FY 2007/2008.

C. All at Once

Some cities decide to increase the rates with just one rate increase during the five-year period. This decision ultimately is driven by the size of the rate increase and how the city's revenue requirement is increasing during each year of the rate forecast. For instance if there is only one year when the revenue requirement increases substantially, then this rate design approach may prove feasible. However, depending on the size of the rate increase, the city may prove more effective in being allowed by its elected officials to increase its rates, if they are implemented in smaller incremental rate increases versus one significant rate increase.

R.W. Beck's experience has been that cities typically implement a rate increase every two to three years, and try to avoid raising rates every year. However, every city's situation needs to be evaluated on its own unique characteristics. It is important for the City of Tucson to realize that there are no "hard and fast" rules with regard to rate design and it becomes more of a policy decision as to what the elected officials and citizens will perceive as being the most equitable.

2. Impact Rate Increases will have on Cost Recovery

R.W. Beck typically recommends that cities keep a "rough rule of thumb" that lets them know how much a rate increase will generate. For instance, with the City of Tucson, every \$.25 increase in the residential rate would generate approximately \$411,000 per year.³ Another way to look at potential rate increases is to say, for every \$1.00 per ton increase in the tipping fee, the revenues generated will increase by approximately \$500,000, assuming all tonnage is assessed a tipping fee. By having a rough approximation as to the amount of money generated by future rate increases, when the City is faced with a \$1 million increase in the annual revenue requirement from one fiscal year to the next, the City can easily determine how much rates will need to increase to recover the cost.⁴

³ Approximately 140,000 residential accounts x \$.25 x 12 months = \$420,000, less 2% for non-collectible accounts.

⁴ It is important that only those customers that are causing the increase in costs have their rates increased. For instance, if the residential recycling collection program costs increase by \$250,000 in a year, only residential customers should pay for this increase, not the commercial or private self-haulers.

3. Importance of Implementing Rate Increases in a Timely Manner

It is essential that the City of Tucson implement future rate increases as needed. For instance, if the City is to consider the movement toward an enterprise fund (See Section F. Recommendation) it is important that the ultimate rate be "cost of service" based, or as close as is politically acceptable. In addition, it is important that future rate increases (residential, commercial, tipping fee) be implemented as soon as they become necessary. If a city continues to under-recover its cost of providing service, the solid waste utility will need to be subsidized by the general fund, or face a reduction in the level of services offered. By maintaining rates that recover the cost of providing service, the residential and commercial customers will better understand and appreciate the direct relationship between the size of their monthly garbage bill and the amount of waste they generate. This will result in a customer that is motivated to recycle and use the City's other solid waste services that encourage diversion of materials from the landfill.⁵

4. Variable Pricing ("Pay As You Throw")

For residential users, the City may wish to pursue variable pricing ("pay as you throw" or PAYT) as an alternative approach to user fees. Rather than charge customers a constant rate for their waste production, variable pricing allows for a tiered pricing strategy based on actual waste produced. In a typical variable pricing program, customers are allowed to choose from multiple container sizes (typically broken down into 30-, 60-, and 90-gallon sizes). All customers are charged the same base rate for fixed costs such as salaries, collections and administrative costs, while an additional variable cost is assessed on the basis of actual waste produced. Properly implemented, this price differential between small and large container sizes can provide customers with an economic incentive to reduce their waste consumption through recycling or other means.

At the request of City staff, R.W. Beck performed a sensitivity analysis of the potential impact of variable pricing on the City's residential rates. Because customer migration from 90-gallon containers to smaller receptacles is highly dependent on economic incentives (i.e. the rate differential between small and large containers), the sensitivity analysis looked at the impact on rates of several different adoption levels for smaller container sizes.

Variable pricing has several benefits relevant to the specific issues facing Environmental Services. Because variable pricing provides an economic incentive for waste reduction and increased recycling, it often decreases the amount of waste that is ultimately landfilled. While individual outcomes vary widely, studies indicate that variable pricing can lead to a 16% average reduction in landfilled waste. Given the high future landfill-

⁵ For residential customers a formal "pay-as-you-throw" rate structure will encourage recycling; however, even a flat fee, with the City's current surcharge for a second container will encourage recycling, albeit at possibly a lower diversion rate. For commercial customers there is a stronger incentive to recycle since they pay based on the size of container and frequency of pick-up.

related costs faced by the City, the extension of useful landfill life provides a strong financial incentive to implement a variable pricing program.

Variable pricing may provide a political benefit as well, by providing customers with a lower-cost option to expected future residential rate increases. It may be easier to achieve political backing for residential rate increases if customers are allowed to voluntarily minimize their individual fee increases through adoption of smaller container sizes.

Finally, variable pricing programs can lead to reductions in overall department expenses. While variable pricing typically has little impact on fixed costs such as administration and collections, the reduction in waste produced can positively impact other cost centers, such as disposal. However, these reductions in departmental costs may be offset by increased costs in areas such as recycling. The literature on this point is inconsistent, and therefore a conservative approach was taken for this analysis and no reductions in operating costs were assumed. Table 9 provides rate details at different adoption levels for each container size. Because City staff indicated that any potential variable pricing program would not be implemented until FY 2007/2008, this analysis only covers the last two years of the five year study.

Table 9
Pay As You Throw Sensitivity Analysis

30/60/90 Gallon Adoption Rate	FY 2007/2008			FY 2008/2009		
	30 gal	60 gal	90 gal	30 gal	60 gal	90 gal
30% / 60% / 10%	\$15.89	\$17.58	\$19.27	\$16.18	\$17.95	\$19.72
20% / 50% / 30%	\$15.55	\$17.00	\$18.45	\$15.93	\$17.45	\$18.96
10% / 45% / 45%	\$15.33	\$16.62	\$17.92	\$15.77	\$17.12	\$18.48

Further study should be taken to determine the actual cost reduction (if any) that would result from each of these adoption rates, as this will heavily influence cost of service calculations. Collection costs will be largely unaffected by the percentage of customers choosing smaller container sizes, but a very high 30 gallon adoption rate could lead to substantial reduction in landfill expenditures. This would allow the City to further reduce rates for those customers choosing smaller container sizes. The above analysis should be taken as a rough guide to the relative impact on different customer categories of the introduction of variable pricing.

F. Recommendations

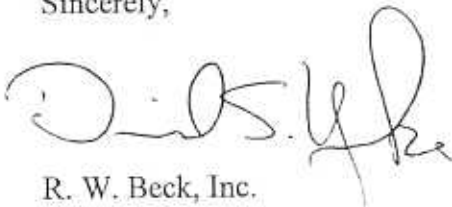
To ensure the financial integrity of Environmental Services and minimize the impact of fluctuations in the economy on the City's ability to provide solid waste services, clean neighborhoods, and environmental programs, the City should strongly consider establishing Environmental Services as an enterprise fund. By operating as an enterprise fund that is financed through user fees, the City will decrease its dependence on City taxes to fund operations. In addition, the City, by implementing a residential user fee,

will increase the incentive for City residents to minimize the amount of waste they generate because residents will become more aware of the costs to manage their waste.

In addition to moving towards an enterprise fund structure, the City needs to address the issue of other municipal departments, as well as mobile home and town home customers, who currently utilize Environmental Services resources on a cost-free basis. Cost of service figures are currently calculated on the assumption that all 38,500 tons of waste produced by city departments, and all 384 non-paying commercial dumpster accounts, will be reimbursed to Environmental Services. If this additional revenue is not realized, this may lead to inadequate cost recovery or subsidization of non-paying city departments through higher fees from other users. The City has indicated that it plans to require all city departments, mobile home and town home facilities to reimburse Environmental Services for services provided, a policy change that the authors of this study strongly support.

R.W. Beck appreciates the opportunity to provide services to the City of Tucson concerning this analysis. If there are any questions concerning this memorandum, or our analysis, please feel free to contact Mr. Dave Yanke at (512) 450-0991.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. S. Yanke", is written over the typed name.

R. W. Beck, Inc.
David S. Yanke
Principal

City of Tucson
Environmental Services
Five Year Revenue Requirement (FY 2004/05 - 2008/09)

	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09
Administration					
Administration					
Salaries	\$ 834,560	\$ 876,700	\$ 930,855	\$ 985,585	\$ 1,041,579
Pension/FICA/Worker's Comp.	181,740	204,820	217,497	230,309	243,416
Group Insurance	91,355	104,550	126,478	139,126	153,038
State Unemployment	350	350	372	394	416
Travel/Training	11,250	11,250	11,250	11,250	11,250
Professional Services	2,000	2,002	2,065	2,131	2,199
Insurance	107,000	112,230	112,230	112,230	112,230
Maintenance - Office	824	849	874	900	927
Telephone	29,314	30,193	31,099	32,032	32,993
Advertising/PR	118,283	118,277	118,620	118,973	119,337
Memberships/Subscriptions	1,103	1,097	1,132	1,168	1,205
Vehicle Related	6,391	6,389	6,593	6,802	7,018
Supplies/Materials	28,902	29,088	31,178	31,374	33,665
Clothing/Uniforms	304	278	282	286	291
Books/Computer Equipment/Other Equipment	4,940	4,882	4,947	5,015	5,085
Other Supplies	716	533	572	613	655
Inter-Activity Natural Gas Fuel	210	218	225	232	239
Inter-Activity Gas	364	364	364	364	364
Subtotal	\$ 1,419,606	\$ 1,504,070	\$ 1,596,633	\$ 1,678,784	\$ 1,765,907
Tucson Clean & Beautiful					
Telephone	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600	\$ 2,600
Contribution to Organizations	44,000	44,000	44,000	44,000	44,000
Office Supplies	2,910	2,890	3,090	3,090	3,310
Subtotal	\$ 49,510	\$ 49,490	\$ 49,690	\$ 49,690	\$ 49,910
Division Total	\$ 1,469,116	\$ 1,553,560	\$ 1,646,323	\$ 1,728,474	\$ 1,815,817
Customer Service and Environmental Planning					
Customer Support and Billing					
Residential Billing	\$ 70,560	\$ 75,852	\$ 81,541	\$ 87,656	\$ 94,231
Salaries	377,690	395,050	419,286	443,780	468,840
Pension/FICA/Worker's Comp.	86,800	97,520	103,520	109,583	115,787
Group Insurance	87,630	95,820	117,260	128,986	141,885
State Unemployment	330	330	350	371	392
Travel/Training	2,000	2,000	2,000	2,000	2,000
Professional Services	19,000	18,997	19,602	20,225	20,866
Insurance	48,164	53,223	53,263	53,305	53,348
Maintenance - Office Equipment	309	318	328	338	348
Telephone	11,277	11,615	11,964	12,323	12,693
Vehicle Related	85,794	85,795	88,526	91,339	94,236
Supplies/Materials	10,594	10,897	11,208	11,528	11,858
Books/Computer Equipment/Other Equipment	69,822	2,803	2,820	2,838	2,857
Other Supplies	44	(282)	(268)	(252)	(236)
Subtotal	\$ 870,014	\$ 849,939	\$ 911,400	\$ 964,021	\$ 1,019,104
Program Development and Planning					
Salaries	\$ 282,110	\$ 301,124	\$ 320,393	\$ 340,106	\$ 360,484
Pension/FICA/Worker's Comp.	53,790	61,590	65,409	69,267	73,216
Group Insurance	26,240	28,250	35,695	39,265	43,191
State Unemployment	100	100	106	112	119
Misc. Distributed Labor	-	-	-	-	-
Travel/Training	11,700	11,700	11,700	11,700	11,700
Professional Services	13,000	13,002	13,415	13,842	14,281
Insurance	35,620	38,870	38,870	38,870	38,870
Maintenance - Equipment	11,330	11,670	12,020	12,381	12,752
Telephone	2,955	2,652	2,732	2,814	2,898
Advertising/PR	344,900	344,896	345,119	345,349	345,585
Memberships/Subscriptions	1,495	1,501	1,549	1,598	1,649
Vehicle Related	3,258	3,259	3,362	3,469	3,579
Supplies/Materials	5,508	5,617	5,744	5,859	5,992
Clothing/Uniforms	165	(170)	(154)	(137)	(120)
Books/Computer Equipment/Other Equipment	8,400	2,402	2,445	2,490	2,537
Other Supplies	140	30	41	52	64
Inter-Activity Natural Gas Fuel	-	-	-	-	-
Inter-Activity Gas	1,495	1,495	1,495	1,495	1,495
Subtotal	\$ 802,206	\$ 827,988	\$ 859,941	\$ 888,532	\$ 918,292
Recycling Grant					
Budget Offset	-	-	-	-	-
Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -

Code Enforcement					
Salaries	513,581	537,377	570,879	604,921	639,910
Pension/FICA/Worker's Comp.	106,900	119,910	127,275	134,717	142,333
Group Insurance	77,589	84,898	103,356	113,692	125,061
State Unemployment	280	280	297	315	333
Travel/Training	4,550	4,550	4,550	4,550	4,550
Professional Services	-	-	-	-	-
Insurance	59,903	63,389	63,438	63,487	63,538
Maintenance	14,935	15,383	15,845	16,320	16,809
Telephone	2,257	1,932	1,991	2,051	2,112
Miscellaneous	1,215	1,252	1,289	1,328	1,368
Vehicle Related	25,111	24,826	25,635	26,467	27,324
Supplies/Materials	8,143	8,309	8,479	8,654	8,832
Clothing/Uniforms	3,035	2,601	2,638	2,677	2,716
Books/Computer Equipment/Other Equipment	18,200	3,200	2,000	2,000	2,000
Other Supplies	(96)	(302)	(298)	(293)	(288)
Inter-Activity Natural Gas Fuel	5,775	6,006	6,186	6,372	6,563
Inter-Activity Gas	6,539	6,539	6,539	6,539	6,539
Vehicles	-	-	-	-	-
Subtotal	\$ 847,917	\$ 880,150	\$ 940,099	\$ 993,798	\$ 1,049,700
Division Total	\$ 2,520,137	\$ 2,558,077	\$ 2,711,440	\$ 2,846,351	\$ 2,987,096
Collections					
Residential Collections					
Salaries	\$ 3,179,357	\$ 3,367,937	\$ 3,565,488	\$ 3,765,163	\$ 3,969,475
Pension/FICA/Worker's Comp.	751,290	853,940	904,370	955,337	1,007,480
Group Insurance	608,900	673,610	816,035	897,639	987,402
State Unemployment	2,150	2,150	2,283	2,418	2,556
Meal Allowances/Sick Leave	500	500	500	500	500
Misc. Labor	8,080	8,080	8,080	8,080	8,080
Travel/Training	7,100	7,100	7,100	7,100	7,100
Professional Services	-	-	-	-	-
Insurance	377,240	394,010	394,010	394,010	394,010
Maintenance	-	-	-	-	-
Telephone	17,176	17,357	17,543	17,735	17,933
Direct Charges	-	-	-	-	-
Memberships/Subscriptions	783	778	802	828	854
Vehicle Related	3,056,353	3,139,947	3,238,090	3,339,176	3,443,296
Supplies/Materials	8,946	9,199	9,459	9,727	10,003
Food/Chemicals	7,500	7,503	7,659	7,818	7,981
Clothing/Uniforms	31,600	31,601	31,983	32,376	32,781
Books/Computer Equipment/Other Equipment	503,290	503,290	503,290	503,290	503,290
Other Supplies	56,146	55,902	58,342	60,880	63,519
Inter-Activity Natural Gas Fuel	4,095	4,259	4,387	4,518	4,654
Inter-Activity Gas	534,176	541,916	547,183	552,607	558,194
Subtotal	\$ 9,154,682	\$ 9,619,079	\$ 10,116,603	\$ 10,559,202	\$ 11,019,108
Clean Tucson					
Salaries	\$ 774,177	\$ 808,827	\$ 857,971	\$ 908,474	\$ 960,866
Pension/FICA/Worker's Comp.	145,940	165,530	175,071	184,714	194,578
Group Insurance	130,854	143,118	174,427	191,870	211,057
State Unemployment	430	430	457	484	511
Meal Allowances/Sick Leave	100	100	100	100	100
Misc. Labor	7,998	8,318	8,650	8,996	9,356
Professional Services	250,000	249,995	257,952	266,147	274,589
Insurance	78,910	81,650	81,650	81,650	81,650
Tipping Fee	331,660	341,610	351,858	362,414	373,286
Vehicle Related	951,831	952,244	980,934	1,010,485	1,040,922
Supplies/Materials	78,140	79,303	81,089	82,917	84,788
Clothing/Uniforms	6,771	6,774	6,850	6,927	7,007
Books/Computer Equipment/Other Equipment	2,500	2,500	2,500	2,500	2,500
Other Supplies	3,860	2,698	2,914	3,139	3,373
Inter-Activity Natural Gas Fuel	420	437	450	463	477
Inter-Activity Gas	72,724	72,890	73,061	73,237	73,418
Budget Contingency	760	760	760	760	760
Subtotal	\$ 2,837,075	\$ 2,917,184	\$ 3,056,694	\$ 3,185,276	\$ 3,319,238
Commercial Collections					
Salaries	\$ 1,695,940	\$ 1,787,720	\$ 1,889,807	\$ 1,992,978	\$ 2,098,532
Pension/FICA/Worker's Comp.	411,250	464,900	491,794	518,974	546,782
Group Insurance	374,309	411,878	498,784	548,662	603,529
State Unemployment	1,130	1,130	1,200	1,271	1,343
Meal Allowances/Sick Leave	-	-	-	-	-
Other Services	-	-	-	-	-
Travel/Training	3,920	3,920	3,920	3,920	3,920
Professional Services	21,495	21,499	22,184	22,888	23,614
Insurance	198,840	209,610	209,610	209,610	209,610

Maintenance	5,006	5,156	5,311	5,470	5,634
Utilities	8,592	8,811	9,037	9,268	9,506
Advertising/PR	12,000	12,002	12,065	12,131	12,199
Memberships/Subscriptions	392	394	406	419	432
Vehicle Related & Misc. Building Maintenance	910,592	934,449	963,827	994,086	1,025,254
Supplies/Materials	6,112	6,248	6,387	6,530	6,676
Food/Chemicals	837	844	861	879	897
Clothing/Uniforms	11,538	11,389	11,524	11,663	11,807
Books/Computer Equipment/Other Equipment	64,396	64,402	64,419	64,436	64,454
Other Supplies	6,630	6,492	6,784	7,088	7,405
Inter-Activity Natural Gas Fuel	1,785	1,856	1,912	1,969	2,029
Inter-Activity Gas	331,266	331,266	331,266	331,266	331,266
Interactivity Credit	11,430	23,200	23,200	23,200	23,200
Subtotal	\$ 4,077,460	\$ 4,307,166	\$ 4,554,298	\$ 4,766,708	\$ 4,988,089
Container Maintenance					
Salaries	\$ 322,740	\$ 339,450	\$ 360,121	\$ 381,011	\$ 402,384
Pension/FICA/Worker's Comp.	74,130	83,810	88,923	94,090	99,377
Group Insurance	65,110	71,070	85,899	94,489	103,938
State Unemployment	230	230	244	259	273
Professional Services	21,495	21,499	22,184	22,888	23,614
Insurance	37,860	39,820	39,820	39,820	39,820
Maintenance	2,843	2,928	3,016	3,106	3,200
Utilities	12,678	13,017	13,367	13,726	14,096
Equipment Rent	602	604	617	629	642
Vehicle Related & Misc. Building Maintenance	91,766	91,758	94,622	97,573	100,611
Supplies/Materials	462	474	487	500	513
Food/Chemicals	4,000	4,002	4,085	4,170	4,256
Clothing/Uniforms	5,720	5,632	5,695	5,761	5,829
Books/Computer Equipment/Other Equipment	10,100	10,100	10,100	10,100	10,100
Other Supplies	122,190	123,738	128,379	133,190	138,178
Inter-Activity Natural Gas Fuel	420	437	450	463	477
Inter-Activity Gas	10,504	10,504	10,504	10,504	10,504
Inter-Activity Oil	510	520	531	541	552
Subtotal	\$ 783,360	\$ 819,593	\$ 869,044	\$ 912,820	\$ 958,364
Division Total	\$ 16,852,577	\$ 17,663,022	\$ 18,596,639	\$ 19,424,007	\$ 20,284,799
Refuse Disposal					
Engineering and Technical Support					
Salaries	\$ 1,433,913	\$ 1,505,194	\$ 1,596,330	\$ 1,688,897	\$ 1,783,986
Pension/FICA/Worker's Comp.	282,250	320,760	340,494	360,435	380,838
Group Insurance	169,405	186,560	222,607	244,867	269,355
State Unemployment	610	610	648	686	725
Travel/Training	36,960	36,960	36,960	36,960	36,960
Professional Services	909,256	921,837	949,345	977,678	1,006,862
Insurance	114,100	123,820	123,820	123,820	123,820
Maintenance	738,500	766,167	785,982	815,361	835,322
Telephone	15,466	15,929	16,408	16,900	17,406
Equipment Rental	490	490	500	510	521
Env. Rentals	115,306	117,328	119,390	121,494	123,640
Advertising	103	96	99	103	106
Licenses/Permits	89,992	92,691	95,471	98,336	101,286
Vehicle Related	60,061	31,031	31,989	32,976	33,993
Supplies/Materials	24,681	24,641	25,199	25,536	26,135
Food	816	832	849	866	883
Uniforms/clothing	5,481	5,447	5,566	5,689	5,816
Books/Computer Equipment/Other Equipment	25,960	16,628	15,844	16,069	16,304
Other Supplies	30,936	31,562	32,823	34,134	35,495
Inter-Activity Natural Gas Fuel	3,600	3,711	3,822	3,937	4,055
Inter-Activity Gas	11,640	11,748	11,859	11,973	12,091
Interactivity Credit	(493,613)	(517,384)	(554,037)	(593,444)	(636,293)
OM O&M Impact for the Proforma	90,000	280,000	310,000	340,000	370,000
Subtotal	\$ 3,665,913	\$ 3,976,657	\$ 4,171,968	\$ 4,363,783	\$ 4,549,305
Landfill Operations					
Salaries	\$ 1,158,090	\$ 1,215,900	\$ 1,285,730	\$ 1,356,301	\$ 1,428,502
Pension/FICA/Worker's Comp.	277,730	312,890	331,058	349,418	368,201
Group Insurance	196,836	214,552	262,306	288,537	317,390
State Unemployment	750	750	797	843	892
Meal Allowances	-	-	-	-	-
Travel/Training	5,920	5,920	5,920	5,920	5,920
Professional Services	24,000	24,002	24,765	25,552	26,363
Insurance	161,580	170,350	170,350	170,350	170,350
Maintenance	180,487	185,902	191,479	197,223	203,140
Utilities	78,020	80,407	82,876	85,427	88,064
Equipment Rental	2,060	2,066	2,112	2,159	2,208
Advertising/PR	500	500	500	500	500

Licenses/Permits	149,288	153,767	158,380	163,131	168,025
Vehicle Related & Misc. Building	938,994	939,002	968,785	999,461	1,031,057
Supplies/Materials	802	(3,542)	(3,392)	(3,237)	(3,078)
Food/Drugs/chemicals	1,398	1,397	1,426	1,455	1,486
Uniforms/clothing	5,364	(14)	163	346	534
Books/Computer Equipment/Other Equipment	4,800	4,848	4,097	4,148	4,201
Other Supplies	24,069	23,926	24,974	26,064	27,197
Inter-Activity Natural Gas Fuel	-	-	-	-	-
Inter-Activity Gas	311,480	311,480	311,480	311,480	311,480
Interactivity Credit	(322,000)	(322,000)	(332,248)	(342,804)	(353,676)
Subtotal	\$ 3,200,168	\$ 3,322,103	\$ 3,491,559	\$ 3,642,275	\$ 3,798,756
Household Hazardous Waste Program					
Professional Services	229,762	229,762	237,085	244,627	252,396
Subtotal	\$ 229,762	\$ 229,762	\$ 237,085	\$ 244,627	\$ 252,396
Division Total	\$ 7,095,843	\$ 7,528,522	\$ 7,900,611	\$ 8,250,685	\$ 8,608,457
Department Total	\$ 27,937,673	\$ 29,303,181	\$ 30,855,013	\$ 32,249,516	\$ 33,688,170
Uncollectable Accounts	\$ 558,753	\$ 586,064	\$ 617,100	\$ 644,990	\$ 673,763
Capital Fund Transfer	500,000	500,000	500,000	500,000	500,000
Administrative Support Transfer	1,000,000	1,500,000	2,000,000	2,500,000	3,000,000
Debt Service	3,997,219	5,096,121	6,647,272	6,876,361	7,383,070
Closure Costs	609,655	609,655	609,655	609,655	609,655
Post Closure Care Costs	1,013,531	1,023,996	1,034,775	1,045,877	1,057,313
Capital Reserve Fund for Vehicle Purchases	2,020,198	1,924,099	4,434,632	3,855,811	4,688,746
Subtotal	\$ 9,699,554	\$ 11,239,935	\$ 15,843,434	\$ 16,032,694	\$ 17,912,547
Revenue Off-Sets					
Refuse Penalties	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
Recycling Revenue	500,000	500,000	500,000	500,000	500,000
Subtotal	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000
Total Revenue Requirement	\$ 36,887,027	\$ 39,793,116	\$ 45,948,448	\$ 47,532,210	\$ 50,850,717

City of Tucson
Environmental Services
FY 2004/05 - 2008/09 Revenue Requirement Summary

	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09
Residential					
Administration	\$ 1,583,953	\$ 1,663,459	\$ 1,811,407	\$ 1,935,355	\$ 2,068,819
Collection	14,131,308	15,276,443	17,328,277	18,101,196	19,416,678
Disposal Operations	2,799,505	3,002,955	3,617,534	3,650,452	3,890,197
Disposal Remediation	1,417,756	1,551,361	1,714,079	1,780,505	1,887,284
Clean Tucson					
Administration	59,463	62,390	67,941	72,558	77,531
Collection	2,428,676	2,557,270	2,953,367	3,051,397	3,257,061
Disposal Operations	234,152	241,177	248,412	255,864	263,540
Disposal Remediation	97,508	100,433	103,446	106,550	109,746
Subtotal	(\$ 22,752,321)	\$ 24,455,488	\$ 27,844,462	\$ 28,953,878	\$ 30,970,855
Commercial Dumpsters					
Administration	\$ 131,298	\$ 137,711	\$ 149,613	\$ 159,703	\$ 170,643
Collection	3,558,430	3,884,518	4,674,439	4,841,252	5,229,067
Disposal Operations	1,206,062	1,300,289	1,582,391	1,593,159	1,700,285
Disposal Remediation	671,547	734,830	811,880	843,348	893,921
Container Maintenance	842,607	896,572	990,799	1,044,157	1,112,051
Subtotal	\$ 6,409,944	\$ 6,953,920	\$ 8,209,122	\$ 8,481,620	\$ 9,105,967
Commercial Roll-offs					
Administration	\$ 3,629	\$ 3,819	\$ 4,172	\$ 4,471	\$ 4,795
Collection	962,178	1,054,432	1,274,360	1,322,843	1,432,111
Disposal Operations	372,241	401,324	488,392	491,716	524,779
Disposal Remediation	207,268	226,799	250,580	260,293	275,901
Container Maintenance	25,063	26,668	29,471	31,058	33,077
Subtotal	\$ 1,570,378	\$ 1,713,041	\$ 2,046,975	\$ 2,110,380	\$ 2,270,664
Privates/Self Haulers					
Disposal Operations	\$ 3,953,202	\$ 4,262,059	\$ 5,186,726	\$ 5,222,023	\$ 5,573,157
Disposal Remediation	2,201,182	2,408,608	2,661,162	2,764,309	2,930,073
Subtotal	\$ 6,154,384	\$ 6,670,667	\$ 7,847,888	\$ 7,986,331	\$ 8,503,231
Total	\$ 36,887,027	\$ 39,793,116	\$ 45,948,448	\$ 47,532,210	\$ 50,850,717

City of Tucson
Environmental Services
Residential Rates - Five Year Projections

	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09
Cost Allocations					
Residential Services / Collections					
Administration	\$ 1,583,953	\$ 1,663,459	\$ 1,811,407	\$ 1,935,355	\$ 2,068,819
Collections	14,131,308	15,276,443	17,328,277	18,101,196	19,416,678
Disposal Operations	2,799,505	3,002,955	3,617,534	3,650,452	3,890,197
Disposal Remediation	1,417,756	1,551,361	1,714,079	1,780,505	1,887,284
Subtotal	\$ 19,932,522	\$ 21,494,218	\$ 24,471,296	\$ 25,467,509	\$ 27,262,977
Clean Tucson					
Administration	\$ 59,463	\$ 62,390	\$ 67,941	\$ 72,558	\$ 77,531
Collection	2,428,676	2,557,270	2,953,367	3,051,397	3,257,061
Disposal Operations	234,152	241,177	248,412	255,864	263,540
Disposal Remediation	97,508	100,433	103,446	106,550	109,746
Community Subsidies:					
Neighborhood Rolloffs	21,454	23,156	27,312	27,798	29,554
Self-Haulers	571,260	454,340	472,420	267,060	143,210
Non-profits and NRCs	569,224	612,660	723,338	736,339	782,019
Subtotal	\$ 3,981,738	\$ 4,051,426	\$ 4,596,237	\$ 4,517,566	\$ 4,662,661
Total Cost	\$ 23,914,260	\$ 25,545,644	\$ 29,067,533	\$ 29,985,075	\$ 31,925,639
Residential Customers	141,571	143,971	146,371	148,771	151,171
Total Monthly Rate	\$ 14.08	\$ 14.79	\$ 16.55	\$ 16.80	\$ 17.60

**City of Tucson
Environmental Services
Commercial Dumpster Monthly Rates
FY 2004/05**

Cost Allocations

Administration	\$ 131,298
Collections	3,558,430
Disposal - Operations	1,206,062
Disposal - Remediation	671,547
Container Maintenance	842,607
Total	\$ 6,409,944

Unit Costs

Administration (per Container per Month)	\$ 2.00
Collections (per "pull")	\$ 6.47
Disposal - Operations (per Cubic Yard)	\$ 0.40
Disposal - Remediation (per Cubic Yard)	\$ 0.22
Container Maintenance (per Container per Month)	\$ 12.81

Monthly Dumpster Rates for FY 2004/05

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$ 45.55	\$ 76.29	\$ 107.03	\$ 137.77	\$ 168.51	\$ 199.25
2	\$ 48.24	\$ 81.68	\$ 115.11	\$ 148.54	\$ 181.98	\$ 215.41
2.75	\$ 50.26	\$ 85.72	\$ 121.17	\$ 156.62	\$ 192.08	\$ 227.53
3	\$ 50.94	\$ 87.06	\$ 123.19	\$ 159.32	\$ 195.44	\$ 231.57
3.5	\$ 52.28	\$ 89.76	\$ 127.23	\$ 164.70	\$ 202.18	\$ 239.65
4	\$ 53.63	\$ 92.45	\$ 131.27	\$ 170.09	\$ 208.91	\$ 247.73
5	\$ 56.32	\$ 97.84	\$ 139.35	\$ 180.86	\$ 222.38	\$ 263.89
6	\$ 59.02	\$ 103.22	\$ 147.43	\$ 191.64	\$ 235.84	\$ 280.05
8	\$ 64.40	\$ 114.00	\$ 163.59	\$ 213.18	\$ 262.78	\$ 312.37
Recycling*	\$ 42.86	\$ 70.90	\$ 98.95	\$ 127.00	\$ 155.04	\$ 183.09

* City of Tucson policy provides a 50% discount to Commercial Customers for Recycling Services

**City of Tucson
Environmental Services
Commercial Dumpster Monthly Rates**

FY 2005/06

Cost Allocations

Administration	\$ 137,711
Collections	3,884,518
Disposal - Operations	1,300,289
Disposal - Remediation	734,830
Container Maintenance	896,572
Total	\$ 6,953,920

Unit Costs

Administration (per Container per Month)	\$ 2.05
Collections (per "pull")	\$ 6.93
Disposal - Operations (per Cubic Yard)	\$ 0.42
Disposal - Remediation (per Cubic Yard)	\$ 0.24
Container Maintenance (per Container per Month)	\$ 13.37

Monthly Dumpster Rates for FY 2005/06

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$ 48.30	\$ 81.18	\$ 114.05	\$ 146.93	\$ 179.81	\$ 212.69
2	\$ 51.16	\$ 86.90	\$ 122.64	\$ 158.38	\$ 194.12	\$ 229.86
2.75	\$ 53.31	\$ 91.19	\$ 129.08	\$ 166.97	\$ 204.85	\$ 242.74
3	\$ 54.02	\$ 92.62	\$ 131.23	\$ 169.83	\$ 208.43	\$ 247.03
3.5	\$ 55.45	\$ 95.49	\$ 135.52	\$ 175.55	\$ 215.59	\$ 255.62
4	\$ 56.88	\$ 98.35	\$ 139.81	\$ 181.28	\$ 222.74	\$ 264.21
5	\$ 59.75	\$ 104.07	\$ 148.40	\$ 192.73	\$ 237.05	\$ 281.38
6	\$ 62.61	\$ 109.80	\$ 156.99	\$ 204.17	\$ 251.36	\$ 298.55
8	\$ 68.33	\$ 121.25	\$ 174.16	\$ 227.07	\$ 279.98	\$ 332.90
Recycling*	\$ 45.44	\$ 75.45	\$ 105.47	\$ 135.49	\$ 165.50	\$ 195.52

* City of Tucson policy provides a 50% discount to Commercial Customers for Recycling Services

**City of Tucson
Environmental Services
Commercial Dumpster Monthly Rates
FY 2006/07**

Cost Allocations

Administration	\$ 149,613
Collections	4,674,439
Disposal - Operations	1,582,391
Disposal - Remediation	811,880
Container Maintenance	990,799
Total	\$ 8,209,122

Unit Costs

Administration (per Container per Month)	\$ 2.19
Collections (per "pull")	\$ 8.17
Disposal - Operations (per Cubic Yard)	\$ 0.50
Disposal - Remediation (per Cubic Yard)	\$ 0.26
Container Maintenance (per Container per Month)	\$ 14.48

Monthly Dumpster Rates for FY 2006/07

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$ 55.38	\$ 94.09	\$ 132.81	\$ 171.52	\$ 210.23	\$ 248.95
2	\$ 58.68	\$ 100.70	\$ 142.71	\$ 184.73	\$ 226.74	\$ 268.75
2.75	\$ 61.16	\$ 105.65	\$ 150.14	\$ 194.63	\$ 239.12	\$ 283.61
3	\$ 61.98	\$ 107.30	\$ 152.61	\$ 197.93	\$ 243.25	\$ 288.56
3.5	\$ 63.63	\$ 110.60	\$ 157.57	\$ 204.53	\$ 251.50	\$ 298.46
4	\$ 65.29	\$ 113.90	\$ 162.52	\$ 211.13	\$ 259.75	\$ 308.37
5	\$ 68.59	\$ 120.50	\$ 172.42	\$ 224.34	\$ 276.26	\$ 328.17
6	\$ 71.89	\$ 127.11	\$ 182.32	\$ 237.54	\$ 292.76	\$ 347.98
8	\$ 78.49	\$ 140.31	\$ 202.13	\$ 263.95	\$ 325.77	\$ 387.59
Recycling*	\$ 52.08	\$ 87.49	\$ 122.90	\$ 158.32	\$ 193.73	\$ 229.14

* City of Tucson policy provides a 50% discount to Commercial Customers for Recycling Services

**City of Tucson
Environmental Services
Commercial Dumpster Monthly Rates
FY 2007/08**

Cost Allocations

Administration	\$ 159,703
Collections	4,841,252
Disposal - Operations	1,593,159
Disposal - Remediation	843,348
Container Maintenance	1,044,157
Total	\$ 8,481,620

Unit Costs

Administration (per Container per Month)	\$ 2.29
Collections (per "pull")	\$ 8.30
Disposal - Operations (per Cubic Yard)	\$ 0.50
Disposal - Remediation (per Cubic Yard)	\$ 0.26
Container Maintenance (per Container per Month)	\$ 14.96

Monthly Dumpster Rates for FY 2007/08

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$ 56.50	\$ 95.75	\$ 135.00	\$ 174.25	\$ 213.50	\$ 252.75
2	\$ 59.79	\$ 102.34	\$ 144.88	\$ 187.43	\$ 229.97	\$ 272.51
2.75	\$ 62.26	\$ 107.28	\$ 152.29	\$ 197.31	\$ 242.32	\$ 287.33
3	\$ 63.09	\$ 108.93	\$ 154.76	\$ 200.60	\$ 246.44	\$ 292.27
3.5	\$ 64.73	\$ 112.22	\$ 159.70	\$ 207.19	\$ 254.67	\$ 302.15
4	\$ 66.38	\$ 115.51	\$ 164.64	\$ 213.77	\$ 262.90	\$ 312.03
5	\$ 69.68	\$ 122.10	\$ 174.52	\$ 226.95	\$ 279.37	\$ 331.79
6	\$ 72.97	\$ 128.69	\$ 184.40	\$ 240.12	\$ 295.84	\$ 351.56
8	\$ 79.56	\$ 141.86	\$ 204.16	\$ 266.47	\$ 328.77	\$ 391.08
Recycling*	\$ 53.21	\$ 89.16	\$ 125.12	\$ 161.08	\$ 197.03	\$ 232.99

* City of Tucson policy provides a 50% discount to Commercial Customers for Recycling Services

**City of Tucson
Environmental Services
Commercial Dumpster Monthly Rates
FY 2008/09**

Cost Allocations

Administration	\$ 170,643
Collections	5,229,067
Disposal - Operations	1,700,285
Disposal - Remediation	893,921
Container Maintenance	1,112,051
Total	\$ 9,105,967

Unit Costs

Administration (per Container per Month)	\$ 2.40
Collections (per "pull")	\$ 8.79
Disposal - Operations (per Cubic Yard)	\$ 0.52
Disposal - Remediation (per Cubic Yard)	\$ 0.27
Container Maintenance (per Container per Month)	\$ 15.62

Monthly Dumpster Rates for FY 2008/09

Dumpster Size	Collections Per Week					
	1	2	3	4	5	6
1	\$ 59.53	\$ 101.05	\$ 142.56	\$ 184.07	\$ 225.59	\$ 267.10
2	\$ 62.97	\$ 107.92	\$ 152.87	\$ 197.83	\$ 242.78	\$ 287.73
2.75	\$ 65.55	\$ 113.08	\$ 160.61	\$ 208.14	\$ 255.67	\$ 303.20
3	\$ 66.41	\$ 114.80	\$ 163.19	\$ 211.58	\$ 259.97	\$ 308.35
3.5	\$ 68.13	\$ 118.24	\$ 168.34	\$ 218.45	\$ 268.56	\$ 318.67
4	\$ 69.85	\$ 121.67	\$ 173.50	\$ 225.33	\$ 277.15	\$ 328.98
5	\$ 73.29	\$ 128.55	\$ 183.81	\$ 239.08	\$ 294.34	\$ 349.61
6	\$ 76.72	\$ 135.43	\$ 194.13	\$ 252.83	\$ 311.53	\$ 370.24
8	\$ 83.60	\$ 149.18	\$ 214.76	\$ 280.33	\$ 345.91	\$ 411.49
Recycling*	\$ 56.10	\$ 94.17	\$ 132.25	\$ 170.32	\$ 208.40	\$ 246.47

* City of Tucson policy provides a 50% discount to Commercial Customers for Recycling Services

**City of Tucson
Environmental Services
Commercial Roll-off Monthly Rates**

FY 2004/05

Cost Allocations

Commercial Roll-offs

Administration	\$ 3,629
Collections	962,178
Disposal - Operations	372,241
Disposal - Remediation	207,268
Container Maintenance	25,063
	<u>\$ 1,570,378</u>

Monthly Unit Costs

Administration (per Container per month)	\$ 1.86
Collections (per "pull")	88.70
Container Maintenance (per Container per month)	12.81

Disposal Fees (Per Ton):

\$ 23.18

Cost

Commercial Roll offs

Disposal - Operations	372,241
Disposal - Remediation	207,268

Privates/Self Haulers

Disposal Operations	3,953,202
Disposal Remediation	2,201,182

Total **6,733,893**

Tonnage

Roll-offs	25,000
City Depts	38,500
Privates	170,000
Self Haulers	57,000

Total **290,500**

Monthly Roll-Off Rates for FY 2004/05

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$ 399.02	\$ 783.37	\$ 1,167.72	\$ 1,552.07	\$ 1,936.42	\$ 2,320.77
30	\$ 399.02	\$ 783.37	\$ 1,167.72	\$ 1,552.07	\$ 1,936.42	\$ 2,320.77
40	\$ 399.02	\$ 783.37	\$ 1,167.72	\$ 1,552.07	\$ 1,936.42	\$ 2,320.77

* Customers are currently charged a \$23 per ton landfill tip fee in addition to the monthly rates

**City of Tucson
Environmental Services
Commercial Roll-off Monthly Rates**

FY 2005/06

Cost Allocations

Commercial Roll-offs

Administration	\$ 3,819
Collections	1,054,432
Disposal - Operations	401,324
Disposal - Remediation	226,799
Container Maintenance	26,668
	<u>\$ 1,713,041</u>

Monthly Unit Costs

Administration (per Container per month)	\$ 1.91
Collections (per "pull")	95.29
Container Maintenance (per Container per month)	13.37

Disposal Fees (Per Ton):

Cost	\$ 25.12
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Commercial Roll offs

Disposal - Operations	401,324
Disposal - Remediation	226,799

Privates/Self Haulers

Disposal Operations	4,262,059
Disposal Remediation	2,408,608

Total	7,298,790
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Tonnage

Roll-offs	25,000
City Depts	38,500
Privates	170,000
Self Haulers	57,000

Total	290,500
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Monthly Roll-Off Rates for FY 2005/06

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$ 428.22	\$ 841.17	\$ 1,254.11	\$ 1,667.05	\$ 2,080.00	\$ 2,492.94
30	\$ 428.22	\$ 841.17	\$ 1,254.11	\$ 1,667.05	\$ 2,080.00	\$ 2,492.94
40	\$ 428.22	\$ 841.17	\$ 1,254.11	\$ 1,667.05	\$ 2,080.00	\$ 2,492.94

* Customers are currently charged a \$23 per ton landfill tip fee in addition to the monthly rates

**City of Tucson
Environmental Services
Commercial Roll-off Monthly Rates**

FY 2006/07

Cost Allocations

Commercial Roll-offs

Administration	\$ 4,172
Collections	1,274,360
Disposal - Operations	488,392
Disposal - Remediation	250,580
Container Maintenance	29,471
	<u>\$ 2,046,975</u>

Monthly Unit Costs

Administration (per Container per month)	\$ 2.05
Collections (per "pull")	112.91
Container Maintenance (per Container per month)	14.48

Disposal Fees (Per Ton):

\$ 29.56

Cost

Commercial Roll offs

Disposal - Operations	488,392
Disposal - Remediation	250,580

Privates/Self Haulers

Disposal Operations	5,186,726
Disposal Remediation	2,661,162

Total

8,586,860

Tonnage

Roll-offs	25,000
City Depts	38,500
Privates	170,000
Self Haulers	57,000

Total

290,500

Monthly Roll-Off Rates for FY 2006/07

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$ 505.82	\$ 995.11	\$ 1,484.40	\$ 1,973.68	\$ 2,462.97	\$ 2,952.26
30	\$ 505.82	\$ 995.11	\$ 1,484.40	\$ 1,973.68	\$ 2,462.97	\$ 2,952.26
40	\$ 505.82	\$ 995.11	\$ 1,484.40	\$ 1,973.68	\$ 2,462.97	\$ 2,952.26

* Customers are currently charged a \$23 per ton landfill tip fee in addition to the monthly rates

**City of Tucson
Environmental Services
Commercial Roll-off Monthly Rates**

FY 2007/08

Cost Allocations

Commercial Roll-offs

Administration	\$ 4,471
Collections	1,322,843
Disposal - Operations	491,716
Disposal - Remediation	260,293
Container Maintenance	31,058
	<u>\$ 2,110,380</u>

Monthly Unit Costs

Administration (per Container per month)	\$ 2.15
Collections (per "pull")	114.91
Container Maintenance (per Container per month)	14.96

Disposal Fees (Per Ton):

Cost	\$ 30.08
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Commercial Roll offs

Disposal - Operations	491,716
Disposal - Remediation	260,293

Privates/Self Haulers

Disposal Operations	5,222,023
Disposal Remediation	2,764,309

Total	8,738,340
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Tonnage

Roll-offs	25,000
City Depts	38,500
Privates	170,000
Self Haulers	57,000

Total	290,500
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Monthly Roll-Off Rates for FY 2007/08

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$ 515.06	\$ 1,013.00	\$ 1,510.95	\$ 2,008.89	\$ 2,506.83	\$ 3,004.78
30	\$ 515.06	\$ 1,013.00	\$ 1,510.95	\$ 2,008.89	\$ 2,506.83	\$ 3,004.78
40	\$ 515.06	\$ 1,013.00	\$ 1,510.95	\$ 2,008.89	\$ 2,506.83	\$ 3,004.78

* Customers are currently charged a \$23 per ton landfill tip fee in addition to the monthly rates

**City of Tucson
Environmental Services
Commercial Roll-off Monthly Rates**

FY 2008/09

Cost Allocations

Commercial Roll-offs

Administration	\$ 4,795
Collections	1,432,111
Disposal - Operations	524,779
Disposal - Remediation	275,901
Container Maintenance	33,077
	\$ 2,270,664

Monthly Unit Costs

Administration (per Container per month)	\$ 2.26
Collections (per "pull")	121.96
Container Maintenance (per Container per month)	15.62

Disposal Fees (Per Ton):

\$ 32.03

Cost

Commercial Roll offs

Disposal - Operations	524,779
Disposal - Remediation	275,901

Privates/Self Haulers

Disposal Operations	5,573,157
Disposal Remediation	2,930,073

Total **9,303,911**

Tonnage

Roll-offs	25,000
City Depts	38,500
Privates	170,000
Self Haulers	57,000

Total **290,500**

Monthly Roll-Off Rates for FY 2008/09

Roll-off Size	Collections Per Week					
	1	2	3	4	5	6
20	\$ 546.39	\$ 1,074.90	\$ 1,603.40	\$ 2,131.90	\$ 2,660.41	\$ 3,188.91
30	\$ 546.39	\$ 1,074.90	\$ 1,603.40	\$ 2,131.90	\$ 2,660.41	\$ 3,188.91
40	\$ 546.39	\$ 1,074.90	\$ 1,603.40	\$ 2,131.90	\$ 2,660.41	\$ 3,188.91

* Customers are currently charged a \$23 per ton landfill tip fee in addition to the monthly rates

City of Tucson
Environmental Services
Subsidies Paid by Residential Customers - FY 2004/05

Annual Tonnage	57,000
Per ton tipping fee	\$ 23.18
Total Annual Cost	\$ 1,321,260
Self Haul Fees	\$ (750,000)

Total Annual Subsidy for Self Haulers \$ 571,260

Roll-offs

Collection Costs	Annual Collections	Cost Per Collection	Annual Collection Cost
Non profits	1352	\$ 88.70	119,917
Recycling	3172	\$ 88.70	281,345
Clean Tucson	104	\$ 88.70	9,224
Subtotal			\$ 410,487

Administration Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 1.86	423
Recycling	45	\$ 1.86	1,002
Clean Tucson	1	\$ 1.86	22
Subtotal			\$ 1,447

Container Maintenance Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 12.81	2,921
Recycling	45	\$ 12.81	6,919
Clean Tucson	1	\$ 12.81	154
Subtotal			\$ 9,994

Disposal Costs	Annual Tonnage*	Cost Per Ton	Annual Disposal Cost
Non profits	6760	\$ 23.18	\$ 156,697
Clean Tucson	520	\$ 23.18	\$ 12,054
Subtotal			\$ 168,750

* Assumes 5 tons per rolloff pull

Total Annual Subsidy for Roll-offs \$ 590,678

City of Tucson
Environmental Services
Subsidies Paid by Residential Customers - FY 2005/06

Annual Tonnage	57,000
Per ton tipping fee	\$ 25.12
Total Annual Cost	\$ 1,431,840
Self Haul Fees	\$ (977,500)

Total Annual Subsidy for Self Haulers \$ 454,340

Roll-offs

Collection Costs	Annual Collections	Cost Per Collection	Annual Collection Cost
Non profits	1352	\$ 95.29	128,838
Recycling	3172	\$ 95.29	302,275
Clean Tucson	104	\$ 95.29	9,911
Subtotal			\$ 441,024

Administration Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 1.91	436
Recycling	45	\$ 1.91	1,034
Clean Tucson	1	\$ 1.91	23
Subtotal			\$ 1,493

Container Maintenance Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 13.37	3,048
Recycling	45	\$ 13.37	7,218
Clean Tucson	1	\$ 13.37	160
Subtotal			\$ 10,426

Disposal Costs	Annual Tonnage*	Cost Per Ton	Annual Disposal Cost
Non profits	6760	\$ 25.12	\$ 169,811
Clean Tucson	520	\$ 25.12	\$ 13,062
Subtotal			\$ 182,874

* Assumes 5 tons per rolloff pull

Total Annual Subsidy for Roll-offs \$ 635,816

City of Tucson
Environmental Services
Subsidies Paid by Residential Customers - FY 2006/07

Annual Tonnage	57,000
Per ton tipping fee	\$ 29.56
Total Annual Cost	\$ 1,684,920
Self Haul Fees	\$ (1,212,500)

Total Annual Subsidy for Self Haulers \$ 472,420

Roll-offs

Collection Costs	Annual Collections	Cost Per Collection	Annual Collection Cost
Non profits	1352	\$ 112.91	152,658
Recycling	3172	\$ 112.91	358,159
Clean Tucson	104	\$ 112.91	11,743
Subtotal			\$ 522,559

Administration Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 2.05	467
Recycling	45	\$ 2.05	1,107
Clean Tucson	1	\$ 2.05	25
Subtotal			\$ 1,599

Container Maintenance Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 14.48	3,302
Recycling	45	\$ 14.48	7,820
Clean Tucson	1	\$ 14.48	174
Subtotal			\$ 11,296

Disposal Costs	Annual Tonnage*	Cost Per Ton	Annual Disposal Cost
Non profits	6760	\$ 29.56	\$ 199,826
Clean Tucson	520	\$ 29.56	\$ 15,371
Subtotal			\$ 215,197

* Assumes 5 tons per rolloff pull

Total Annual Subsidy for Roll-offs \$ 750,651

City of Tucson
Environmental Services
Subsidies Paid by Residential Customers FY 2007/08

Annual Tonnage	57,000
Per ton tipping fee	\$ 30.08
Total Annual Cost	\$ 1,714,560
Self Haul Fees	\$ (1,447,500)

Total Annual Subsidy for Self Haulers \$ 267,060

Roll-offs

Collection Costs	Annual Collections	Cost Per Collection	Annual Collection Cost
Non profits	1352	\$ 114.91	155,358
Recycling	3172	\$ 114.91	364,495
Clean Tucson	104	\$ 114.91	11,951
Subtotal			\$ 531,804

Administration Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 2.15	491
Recycling	45	\$ 2.15	1,163
Clean Tucson	1	\$ 2.15	26
Subtotal			\$ 1,680

Container Maintenance Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 14.96	3,411
Recycling	45	\$ 14.96	8,080
Clean Tucson	1	\$ 14.96	180
Subtotal			\$ 11,671

Disposal Costs	Annual Tonnage*	Cost Per Ton	Annual Disposal Cost
Non profits	6760	\$ 30.08	\$ 203,341
Clean Tucson	520	\$ 30.08	\$ 15,642
Subtotal			\$ 218,982

* Assumes 5 tons per rolloff pull

Total Annual Subsidy for Roll-offs \$ 764,137

City of Tucson
Environmental Services
Subsidies Paid by Residential Customers - FY 2008/09

Annual Tonnage	57,000
Per ton tipping fee	\$ 32.03
Total Annual Cost	\$ 1,825,710
Self Haul Fees	\$ (1,682,500)

Total Annual Subsidy for Self Haulers \$ 143,210

Roll-offs

Collection Costs	Annual Collections	Cost Per Collection	Annual Collection Cost
Non profits	1352	\$ 121.96	164,893
Recycling	3172	\$ 121.96	386,865
Clean Tucson	104	\$ 121.96	12,684
Subtotal			\$ 564,442

Administration Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 2.26	516
Recycling	45	\$ 2.26	1,223
Clean Tucson	1	\$ 2.26	27
Subtotal			\$ 1,767

Container Maintenance Costs	Number of Containers	Monthly Cost Per Container	Annual Container Cost
Non profits	19	\$ 15.62	3,562
Recycling	45	\$ 15.62	8,436
Clean Tucson	1	\$ 15.62	187
Subtotal			\$ 12,186

Disposal Costs	Annual Tonnage*	Cost Per Ton	Annual Disposal Cost
Non profits	6760	\$ 32.03	\$ 216,523
Clean Tucson	520	\$ 32.03	\$ 16,656
Subtotal			\$ 233,178

* Assumes 5 tons per rolloff pull

Total Annual Subsidy for Roll-offs \$ 811,573

City of Tucson
Environmental Services
Five-Year Debt Service Summary

	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09
Lease/Purchase Agreements					
Existing					
Vehicles & containers	\$ 62,881	\$ -	\$ -	\$ -	\$ -
14725 65/95 Gal Carts	148,032	148,032	-	-	-
1912 65 Gal Carts	18,708	18,708	9,354	-	-
6000 35 Gal Carts	48,403	48,403	24,201	-	-
Landfill Heavy Equipment	250,000	250,000	250,000	-	-
Certificates of Participation (COP)					
Projected COP for Vehicles and Containers					
Vehicle Purchases	\$ 473,739	\$ 1,010,373	\$ 1,578,021	\$ 1,736,159	\$ 1,736,159
Rear Loader for Clean Tucson	28,641	28,641	28,641	28,641	28,641
Side Loaders & Containers for Residential Collections	156,442	315,052	433,586	552,120	670,655
Containers for Commercial Collections	41,207	83,164	125,877	168,590	211,303
Subtotal	\$ 1,228,052	\$ 1,902,372	\$ 2,449,680	\$ 2,485,510	\$ 2,646,757
General Obligation Bonds					
1994 General Obligation Bonds - Series A SWMD's Share	\$ 105,188	\$ 105,188	\$ 105,188	\$ 105,188	\$ 105,188
1994 General Obligation Bonds - Series B SWMD's Share	\$ 89,256	\$ 89,256	\$ 89,256	\$ 89,256	\$ 89,256
1994 General Obligation Bonds - Series E SWMD's Share	\$ 580,875	\$ 573,975	\$ 571,725	\$ 563,775	\$ 560,475
2000 General Obligation Bonds - Series A SWMD's Share	\$ 224,070	\$ 224,070	\$ 224,070	\$ 297,070	\$ 304,778
2000 General Obligation Bonds - Series B SWMD's Share	\$ 183,085	\$ 183,085	\$ 183,085	\$ 183,085	\$ 183,085
2000 General Obligation Bonds - Series C SWMD's Share	\$ 84,050	\$ 84,050	\$ 120,930	\$ 142,136	\$ 155,412
1998 Refunding (94 Series A and B) - SWMD's Share	\$ 431,997	\$ 406,525	\$ 406,280	\$ 407,453	\$ 407,140
2003 Refunding (94 Series A/1993 Refund) - SWMD's Share	\$ 165,163	\$ 163,389	\$ 163,442	\$ 162,732	\$ 427,963
Projected Debt					
Issued to finance unfunded capital improvement projects	\$ 99,581	\$ 143,513	\$ 838,984	\$ 894,956	\$ 929,830
Issued to finance funded CIP (debt financing)	\$ 725,658	\$ 938,705	\$ 1,079,072	\$ 1,120,921	\$ 1,142,020
Issued to finance funded CIP (2000 GO bonds)	\$ 80,243	\$ 273,709	\$ 407,276	\$ 415,994	\$ 422,882
Issued to finance funded CIP (1994 GO bonds)	\$ -	\$ 8,284	\$ 8,284	\$ 8,284	\$ 8,284
Total Debt Service	\$ 3,997,217	\$ 5,096,121	\$ 6,647,272	\$ 6,876,361	\$ 7,383,070

City of Tucson
Environmental Services
Debt Expense by Service Category

	FY 2004/05	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09
Residential					
Administration	\$ 74,373	\$ 158,621	\$ 247,738	\$ 272,564	\$ 272,564
Collection	481,197	763,973	832,261	953,830	1,072,364
Disposal Operations	407,666	485,685	730,347	694,767	730,884
Disposal Remediation	609,530	697,303	823,833	856,786	929,562
Clean Tucson					
Administration	59	125	196	215	215
Collection	67,743	112,035	158,888	171,941	171,941
Disposal Operations	-	-	-	-	-
Disposal Remediation	-	-	-	-	-
Subtotal	\$ 1,640,568	\$ 2,217,743	\$ 2,793,263	\$ 2,950,104	\$ 3,177,530
Commercial Dumpsters					
Administration	\$ 121	\$ 257	\$ 402	\$ 442	\$ 442
Collection	109,779	230,828	357,705	414,620	444,519
Disposal Operations	192,522	228,818	344,012	326,964	344,072
Disposal Remediation	288,721	330,293	390,223	405,831	440,304
Container Maintenance	4,776	10,186	15,909	17,503	17,503
Subtotal	\$ 595,918	\$ 800,382	\$ 1,108,250	\$ 1,165,360	\$ 1,246,840
Commercial Roll-offs					
Administration	\$ 4	\$ 8	\$ 12	\$ 13	\$ 13
Collection	34,648	72,480	111,998	132,251	145,065
Disposal Operations	59,420	70,623	106,177	100,915	106,195
Disposal Remediation	89,111	101,942	120,439	125,257	135,896
Container Maintenance	142	303	473	521	521
Subtotal	\$ 183,326	\$ 245,356	\$ 339,099	\$ 358,957	\$ 387,690
Privates/Self Haulers					
Disposal Operations	\$ 631,044	\$ 750,015	\$ 1,127,596	\$ 1,071,716	\$ 1,127,792
Disposal Remediation	946,362	1,082,626	1,279,064	1,330,224	1,443,218
Subtotal	\$ 1,577,406	\$ 1,832,641	\$ 2,406,660	\$ 2,401,940	\$ 2,571,010
Total	\$ 3,997,217	\$ 5,096,121	\$ 6,647,272	\$ 6,876,361	\$ 7,383,070

City of Tucson
Solid Waste Management Department
Unfunded Capital Improvement Projects

Project	Rem / Ops	Year Funds Needed				2009 FY 08/09	Future	Total
		2005 FY 04/05	2006 FY 05/06	2007 FY 06/07	2008 FY 07/08			
Solid Waste Management								
Non-Closure								
Harrison Landfill End Use	rem	\$ -	\$ 375,000	\$ -	\$ -	-	-	\$ 375,000
Household Hazardous Waste Facility	ops	-	-	-	-	-	-	-
Los Reales Access Roadway Improvements	ops	-	100,000	2,312,000	-	-	-	2,412,000
Los Reales Buffer Improvements	ops	-	-	200,000	242,000	-	-	442,000
Los Reales Drainage Improvements	ops	-	-	-	-	-	580,000	580,000
Los Reales Facilities	ops	-	-	220,000	-	-	-	220,000
Los Reales Future Cells	ops	-	-	3,750,000	-	150,000	-	3,900,000
Los Reales Gas Control	ops	-	-	95,000	-	-	-	95,000
Los Reales Self Hauler Facility	ops	-	50,000	700,000	-	-	-	750,000
Mullins Landfill Stormwater Controls	rem	1,241,000	-	-	-	-	-	1,241,000
Closure								
Closed Landfill Improvements	ops	-	-	230,000	173,000	100,000	-	503,000
Closed Landfill Gas Mitigation	rem	-	-	165,000	170,000	175,000	-	510,000
Irvington Landfill Closure	rem	-	-	200,000	200,000	200,000	-	600,000
Los Reales Final Closure	rem	-	-	-	-	-	28,000,000	28,000,000
Los Reales Intermediate Closure	rem	-	-	100,000	-	-	927,000	1,027,000
Tumamoc Landfill Closure	rem	-	-	300,000	-	-	-	300,000
Environmental Services								
Non-Closure								
City Landfill Groundwater Investigations	rem	-	-	300,000	100,000	100,000	50,000	550,000
Harrison Landfill Groundwater Remediation	rem	-	-	100,000	29,000	-	-	129,000
Los Reales Landfill Groundwater Remediation	rem	-	-	100,000	100,000	-	-	200,000
Los Reales Landfill Southwest Remediation	rem	-	-	100,000	100,000	-	-	200,000
Price Service Center Remediation	rem	-	-	100,000	71,000	150,000	100,000	421,000
Closure								
Cottonwood Landfill Project	rem	-	-	100,000	-	-	-	100,000
Subtotal		\$ 1,241,000	\$ 525,000	\$ 9,072,000	\$ 1,185,000	\$ 875,000	\$ 29,657,000	\$ 42,555,000